Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE
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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES
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Ex parte JOHN YEN
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Appeal No. 1998-0948
Application No. 08/198,343
_____

ON BRIEF
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Before JERRY SMITH, BARRETT, and DIXON, **Administrative Patent Judges**.

DIXON, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-13 and

15-32, which are all of the claims pending in this application.

We AFFIRM-IN-PART.

BACKGROUND

The appellant's invention relates to a system for automatic recovery from software

problems that cause computer failure. Specifically, appellant's invention is concerned with

problems during initial booting of the computer at startup. An understanding of the

invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1.   In a computer, a system for recovering from software problems that interfere
with proper startup of the computer, comprising:

a storage mechanism having at least a main storage area from which operating
system software is normally retrieved and loaded into working memory during startup of
the computer, and a secondary area storing at least those portions of said operating
system software which are necessary to start the computer;

means for detecting a software problem that interferes with proper startup of the
computer;

means for attempting to fix a detected software problem; and

means responsive to the detection of said problem for booting the computer from
the portions of the operating system stored in said secondary area when the problem is
not fixed by said attempting means, to thereby enable the computer to be started.

The prior art references of record relied upon by the examiner in rejecting the

appealed claims are:

Calle et al. (Calle)	4,070,704	Jan. 24, 1978
Bentley et al. (Bentley)	4,654,852	Mar. 31, 1987
Arnold et al. (Arnold)	5,128,995	Jul. 07, 1992

Claims 24-28, 31 and 32[1] stand rejected under 35 U.S.C. § 102 as being

anticipated by Arnold.   Claims 1-5, 7-13[2] and 15-22 stand rejected under 35 U.S.C.

§ 103 as being unpatentable over Arnold in view of Calle. Claims 8 and 9 stand rejected

under 35 U.S.C. § 103 as being unpatentable over Arnold and Calle in view of Bentley.

Claim 32 also stands rejected under 35 U.S.C. § 103 as being unpatentable over Arnold.

Claims 29 and 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over

Arnold in view of Bentley.   Claims 6 and 23 stand rejected under 35 U.S.C. § 103 as

being unpatentable over Arnold in view of Calle.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the

appellant regarding the above-noted rejections, we make reference to the examiner's

answer (Paper No. 22, mailed Apr. 1, 1997) and the supplemental examiner's answer

(Paper No. 25, mailed Sep. 3, 1997) for the examiner's reasoning   in support of the

rejections, and to the appellant's brief (Paper No. 21, filed Dec. 23, 1996) and reply

brief(Paper No. 23, filed Jun. 2, 1997) for the appellant's arguments thereagainst.

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[1]We note that the examiner has listed claim 32 as being rejected under 35 U.S.C. § 102, but has not specifically addressed the claim in this rejection. The examiner has also listed claim 32 as being rejected under 35 U.S.C. § 103 and has addressed the claim in this rejection. Therefore, we will review claim 32 as being rejected only under 35 U.S.C. § 103 over Arnold.

[2]We note that the examiner has listed claims 8 and 9 as being rejected under 35 U.S.C. § 103 over Arnold and Calle, but did not specifically address these claims in the rejection. The examiner also listed claims 8 and 9 as being rejected under 35 U.S.C. § 103 over Arnold, Calle and Bentley. In this rejection, the examiner addressed the claims. Therefore, we will review claims 8 and 9 as being rejected under 35 U.S.C. § 103 over Arnold, Calle and Bentley.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

At the outset, we note that the language of claim 1 is quite broad in the recitation of the structure and function performed by the claimed invention. Claim 1 recites a "storage mechanism" which is described at page 7 of the specification. The specification at page 7 discusses varied scenarios for a restart of the computer by installing a minimal bootable system on the primary volume or the startup application may directly boot from the minimal system in the recovery volume. The specification further states that the recovery software is located in a separate area of permanent storage and that this may be a separate area/partition or separate volume on a partition. The specification also states that the secondary volume or partition may not be located on the same storage device as the main volume from which the system software is normally loaded and may be on a different device such as a flash memory or network server, as long as it is accessible during startup. Therefore, it is clear that the language of claim 1 encompasses more than just storage on the same hard disk drive.

We have read and considered appellant's arguments in the main brief. The examiner has made a new grounds of rejection in the answer. We will address appellant's arguments made in the reply brief since these arguments address the specific rejections made by the examiner in the answer.

We note that appellant's description of Arnold (see Arnold at column 4) describes the operation of Arnold as booting from a protected portion of the hard disk and if an error is detected then booting up the system utilities from a diskette or from a protected partition on the hard drive. (See reply brief at pages 2-3.) This corresponds to the examiner's characterization of Arnold. We agree with appellant and the examiner. Appellant argues that Arnold does not disclose the basic features which underlie the present invention. (See reply brief at page 3.) We disagree with appellant with respect to the invention as set forth in the language of claim 1. Claim 1 recites that the operating system is stored and used to start the computer. The language of claim 1 further recites that there is a means for detecting a software problem, means for attempting to fix the detected software problem and means for booting the computer. We note that the above language is broad and not specific as to the specific location of storage, detection of problem, attempt or level of operation of the computer after booting. As stated above, we agree with the examiner that Arnold has two protected areas in memory from which the computer may be started with varied levels of operation.

Appellant argues that the second area of Arnold is the system partition region which stores the system utilities and this data is stored in the same area. (See reply brief at page 4.) We disagree with appellant. The area cannot store both the BIOS image and system utilities at the same physical locations, therefore, they must be stored at different locations, but they may be protected from corruption by the same means. Furthermore, the examiner maintains that Arnold stores an image of the system reference diskette on a direct access storage device. (See supplemental answer at page 3 and Arnold at col. 3.) We agree with the examiner. The language of claim 1 does not specify or define the secondary area as being within a separate protected area of memory. Furthermore, the use of the boot diskette which is separate from the main memory is motivated by the desire for secure and incorruptible files to start the computer when there are problems booting from the copy on the hard disk. Appellant argues that there is no suggestion of having a second copy with minimal portions of the operating system necessary to run the computer. (See reply brief at page 4.) We find no support for this argument in the language of claim 1. The language of claim 1 merely recites that the computer is enabled to be started. Appellant argues that Arnold does not disclose where the operating system is stored and that the system utilities do not constitute an operating system. We disagree with appellant with respect to the level of description and functionality recited in the

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language of claim 1 with respect to the operating system. Appellant argues that the utilities

are a separate set of programs to configure the computer to operate with the I/O devices.

We agree with appellant in this aspect and note that the computer would

be operating with the I/O devices. However, we find this argument unpersuasive.

Appellant argues that Calle is concerned with hardware-based problems and the

present invention is concerned with software problems. While we agree with appellant that

Calle explicitly discusses the manipulation of hardware to attempt to get the system to

startup, appellant does not address the suggestion which Calle would have made to skilled

artisans that other fixes may be needed to start up the computer. For example, the skilled

artisan would have been motivated merely to restart the computer in case the software did

not load properly because of a glitch or erroneous flag or state. Appellant argues the Calle

does not disclose a means for attempting to fix a detected software problem. We

disagree with appellant. (See reply brief at page 7.) Appellant appears to be arguing the

bodily incorporation of the teachings of Calle into Arnold rather than the suggestion to

skilled artisans of fixing problems which occur during startup. Therefore, this argument is

not persuasive. With respect to claim 19, the language of claim 19 does not require the

booting of the computer. Therefore, this argument is not persuasive.

With respect to claims 8 and 9, appellant argues that Bentley does not disclose the

recording of events that occur during a failed startup. (See reply brief at page 8.) We

disagree with appellant.   The examiner maintains that Bentley discloses the display in

both textual and graphical form information concerning the status of components and

requesting action by the operator. (See answer at page 11 and Bentley at columns 1-2.)

We agree with the examiner that Bentley would have suggested the recordation of

problems and/or status. Bentley further would have suggested the use of recordation of

problems and communication thereof in the evaluation of the operation and proposed

corrective action.

Appellant argues that none of the applied references are directed to the same

problem as the present invention and that none of the references anticipate or suggest the

invention recited in the claims. (See reply brief at pages 8-9.) We disagree with appellant

to the extent discussed above.

With respect to claims 2, 11 and 24, appellant argues that Arnold does not teach or

suggest that upon detection of a problem, the portion of the operating system that is in the

secondary area is loaded into the main area as claimed in claims 2, 11 and 24. (See

reply brief at page 5.) We agree with appellant. Furthermore, we agree with appellant that

Arnold alone does not teach this copying with respect to claim 31.

Similarly, we find this limitation in claim 29, and we find that neither Bentley nor Calle

teaches or fairly suggest the copying of the software from a second location to the main location and then booting from the main location to remedy the above noted deficiency in Arnold. Therefore, we cannot sustain the rejection of claims 2, 11, 24, 29 and 31 and their dependent claims 6, 23, 25-28, 30 and 32.

With respect to claim 15, appellant argues that Arnold does not disclose the steps as recited in the language of claim 15. (See reply brief at page 8.) The examiner has proffered only a brief discussion of claim 15 in the combination of Calle and Arnold and only discusses Arnold with respect to the warm boot. (See answer at page 7 and Arnold at columns 18 and 19.) As such, we find no clear support for the examiner's conclusion that Arnold teaches or suggests appellant's claimed invention. Therefore, we find that the examiner has not set forth a ***prima facie*** case of obviousness, and we will not sustain the rejection of claim 15. Moreover, the examiner generally relies upon Bentley to teach indication to the user, but the examiner has not applied Bentley against claim 15.

CONCLUSION

To summarize, the decision of the examiner to reject claims 24-28 and 31 under 35 U.S.C. § 102 is reversed; the decision of the examiner to reject claims 1, 3-5, 7-13 and 16-22 under 35 U.S.C. § 103 is affirmed; and the decision of the examiner to reject claims 2, 6, 11, 15 and 23-32 under 35 U.S.C. § 103 is reversed.

No time period for taking any subsequent action in connection with this appeal may

be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

JERRY SMITH   )
Administrative Patent Judge   )
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) BOARD OF PATENT
LEE E. BARRETT   )   APPEALS
Administrative Patent Judge   )   AND
) INTERFERENCES
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JOSEPH L. DIXON   )
Administrative Patent Judge   )

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